

REMARKS/ARGUMENTS

This is responsive to the Official Action of April 11, 2005. Claims 1, 2 and 4-8 remain active in the application.

The sole issue raised in the outstanding Official Action is the patentability of claims 1, 2 and 4-8 over the combination of Miyashita et al (previously cited) in view of Mahmud et al and published U.S. application no. 2003/0040553 (newly cited).

Applicants' claims are directed to a metal plate, a film made from silica and the reaction product of an acid component with a metal or a compound of metal (as described in detail in various claims) then a rubber layer formed on the opposite surface of the metal plate through the film. Key to understanding the invention is that the film is made from silica and the reaction product of an acid component and a metal or compound of a metal other than chromium or a chromium compound. Silica is an essential component of the claim and various types of silica are discussed throughout the description of the invention, in particular in the paragraph bridging pages 5 and 6; metals are described in some detail in the first full paragraph of page 6 of the description.

In the current Official Action the examiner summarizes the relevant portions of the primary reference Miyashita as may be seen from Figure 1 of the drawings of that patent.

Importantly, it is noted that "Miyashita does not disclose the film (4) being composed of a metal other than chromium or a chromium compound". To overcome the deficiencies in the primary reference, in an effort to support a rejection based upon alleged obviousness, the examiner newly cites a published U.S. application to Mahmud which, quite curiously, is concerned with rubber formulations to make tires – a totally unrelated field. That this is so will be apparent from a brief reading of the document itself, for instance note the number of times the word "tire" or "tires" is mentioned on page 1 of the published application.

While the examiner draws attention to paragraphs 8, 16 and 40, what apparently has caused confusion is that in the Mahmud reference an acid component is used to react with a nitrite to generate a diazonium salt (*see* paragraph 40) and this salt, in turn, is used to attach an organic group to the carbon black in order to change the properties of the carbon black when it is incorporated into elastomeric products.

A closer review will demonstrate the irrelevance of this reference. Mahmud is all about silicon-treated carbon blacks. According to [0033], the silicon-treated carbon blacks of Mahmud may have an organic group attached. One process for attaching an organic group to the carbon black involves the reaction of at least one diazonium salt with a carbon black [0034]. The diazonium salt may be generated by reacting a primary amine, a nitrite and an acid [0040]. The nitrite used to generate the diazonium salt may be any metal nitrite, preferably lithium nitrite, sodium nitrite, potassium nitrite, or zinc nitrite, or any organic nitrite such as, for example, isoamylmitrite or ethylnitrite [0040].

The examiner states in the Office Action (page 2, item iii) that Mahmud discloses a metal such as lithium nitrite [0040], and a reaction of an acid component: the diazonium salt.

One skilled in this art will understand from the above disclosures of Mahmud [0033], [0034] and [0040], the diazonium salt formed is only used for attaching the organic group to the carbon black. Therefore, the diazonium salt cannot be a component of the elastomeric compounds of Mahmud.

This is all the more so since according to Mahmud's own statements the diazonium salts are unstable and are easy to decompose; *see* [0045]. Apparently Mahmud considers that the diazonium salt itself does not remain in the elastomeric compounds, final products. The reader of [0045] would have the understanding that diazonium salts will be decomposed during the process.

From the above technical synopsis of Mahmud the skilled person will quickly conclude that: (1) neither the lithium nitrite nor the diazonium salt mentioned in Mahmud have any relation to the film of the claims of the present invention; and (2) the elastomeric compounds of Mahmud do not contain diazonium salts in the final products.

Mahmud is in no way relevant to the surface treatment of a metal substrate or any other type of arrangement with which the present application is concerned. In short, the descriptions

contained in Mahmud, especially those to which the examiner refers, are in no way pertinent to the subject matter defined by applicants' claims.¹

The obviousness or unobviousness of the claims in question is to be determined following the analysis set forth in *Graham v. John Deere*, 383 U.S. 1, 148 U.S.P.Q. 459 (1966). The analysis requires determining the scope and content of the prior art, ascertaining the differences between the prior art and the claims in issue, resolving the level of ordinary skill in the pertinent art, and lastly evaluating evidence of secondary considerations of patentability.

In the first, instance the examiner must present a *prima facie* case of obviousness. In order to do so, the art cited must include the following elements: (1) there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings; (2) there must be a reasonable expectation of success; and (3) the prior art reference must teach or suggest all the claim limitations. *In re Vaeck*, 947 F.2d 488, 20 U.S.P.Q.2d 1438 (Fed. Cir. 1991).

"Two criteria have evolved for determining whether prior art is analogous: (1) whether the art is from the same field of endeavor, regardless of the problem addressed, and (2) if the reference is not within the field of the inventor's endeavor, whether the reference still is reasonably pertinent to the particular problem with which the inventor is involved." *In re Clay*, 966 F.2d 656, 658-9, 23 U.S.P.Q.2d 1058, 1060 (Fed. Cir. 1992).

The question is whether Mahmud et al describes information which is reasonably pertinent to the particular problem with which the inventor was involved.

"A reference is reasonably pertinent if, even though it may be in a different field from that of the inventor's endeavor, it is one which, because of the matter with which it deals, logically would have commended itself to an inventor's attention in considering this problem." *In re Clay*, 966 F.2d at 659, 23 U.S.P.Q.2d at 1061.

¹ Further, the assertion given in item iv of page 2 of the Official Action "It would have been obvious to one of ordinary skill in the art to modify the film of Miyashita with the material of Mahmud in order to impart proper abrasion resistance to the gasket material" is hardly what this reference describes. In fact "the silicon-treated carbon black imparts to the elastomer poorer abrasion resistance ..." which is stated in paragraph 16, a specific passage to which the examiner refers.

For the record, the analysis undertaken by the court in *In re Clay*, 966 F.2d 656, 23 U.S.P.Q.2d 1058 (Fed. Cir. 1992), is instructive since it is so similar to the present case. In Clay, the court found that a reference in question was not reasonably pertinent to the problem with which the inventor was concerned because a person having ordinary skill in the art would not reasonably have expected to solve the problem faced by the inventor there (dead volume in tanks for refined petroleum) by considering a reference dealing with a refined petroleum) by considering a reference dealing with a separate problem (plugging underground formation anomalies). Similarly, in the present case a person having ordinary skill in the art of developing gasket materials would not reasonably have expected to solve the problem of improving adhesion durability to antifreeze while avoiding the use of chromium and chromium compounds by considering a reference dealing with improving tire tread life.

Not only is the Mahmud disclosure non-relevant to the claims of the present application, it is equally if not more so non-relevant to the contents of the primary reference -- there is no suggestion to modify the film (surface treatment) of Miyashita with the elastomeric composition (a rubber) of Mahmud. Even assuming *arguendo* that one might combine the teachings of the two documents, still the claimed subject matter would not be suggested.

Applicants believe that there is some confusion as to what is meant by the term "surface treatment" on the surface of a metal plate. In the present invention the surface of a metal plate is treated with the indicated reactants and thereafter a rubber is laid on the thus-treated surface. Clearly the film as defined in claim 1 is not a rubber but in fact is a surface treatment on the metal plate.

If these factors as well as the relevant law are taken into account it will be quickly appreciated that applicants' claims are in no way suggested by the disclosure of the two documents and that, in fact, the two documents are inappropriately combined. Even so, the combination of the two is not suggestive of applicants' claims.

Reconsideration and allowance are solicited.

SAITO, H. et al.
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Respectfully submitted,

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